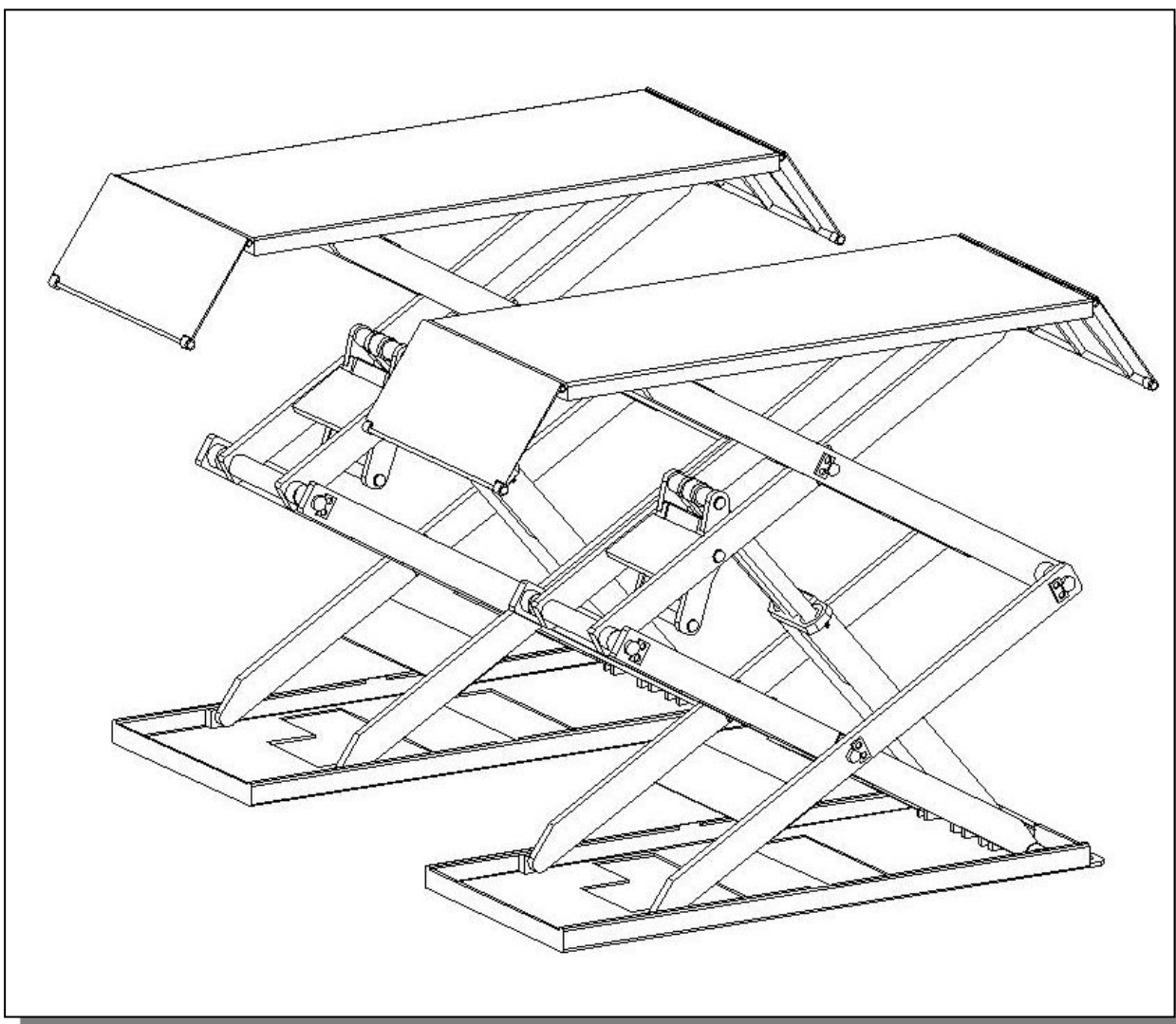




Ultra-thin Small Scissor Slab Hydraulic Car Lifting Machine



User's Manual

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Packaging, Transportation and Storage



All the operations such as packaging, handling, transportation and dismounting shall be operated by specialized technicians.

Package

Standard Configuration:

One oil pipe and accessory; one primary platform, secondary platform, one of control console, four approach bridge slabs, five oil pipe cover plates, five kinds of standard configuration.

Packing List:

Carton No.	Name	Name and Quantity of Accessories
1.	Oil pipe and fittings	12 sets of M16 ground screw; 1 set of $\phi 6 \times 4$ mm air pipe (contains one air pipe tee joint); 4 foam pads; 1 Operation and Maintenance Manual; 10 nylon cable ties; 10 short oil pipes; 3 long oil pipes; 20 sets of M8 ground screw; 1 angle guard board welding; 2 $\phi 8$ bonded washer (customer spare)
2.	Lifting platform (1P、2P)	One piece of primary platform and one piece of secondary platform
3.	Operation cabinet (EX)	
4.	Approach bridge slab	4 approach bridge welding, 4 approach bridge connecting shaft, 8 approach bridge travelling wheels, 16 $\phi 20$ snap springs, 8 $\phi 10$ snap springs
5.	Oil pipe cover plate	One of 730MM, two of 630MM, three of 750MM

Transportation



Goods shall be handled and moved by crane and fork lift truck weighing over 1 ton. To prevent goods from falling down, during the lifting operation, one person shall be in charge of observing the goods intently, so as to avoid accidents. The goods shall be transported by vehicles or liners.

The goods are transported by truck or steamship.

When the goods arrive at the destination, it is necessary to check whether the

goods are complete to prevent damage and loss during the transportation. If there is any damage in the package, inspection to the damaged box shall be conducted by the *Encasement List* to confirm the situation about the damage and loss of goods. Meanwhile, it is necessary to notify the person that undertakes the transportation immediately.



The machine is heavy goods! Manual loading, unloading and handling shall be beyond the consideration, safety during the operation is of great importance.

Storage:

The machinery and equipment shall be placed in indoor warehouse and outdoor storage shall make good water-proof treatment.

Van truck shall be adopted during the transportation and goods shall be stored in containers if they are shipped by liners.

The control panel shall be kept upright during the transportation; in addition, extrusion of goods shall be avoided.

Environmental temperature for storage of machine: -25℃~55℃.



The manufacturer keeps the right of the minor modification of the manual due to advancement of technology

Chapter I : Description of Machine

Machinery Application

Ultra-thin small scissor slab hydraulic car lifting machine can lift various cars of no more than 3000kg. It is suitable for car service, repair, tire removal and maintenance for car maintenance enterprises, especially appropriate for being used in basement or on the upper floor, there is no need for construction pit.

Structural Characteristics

- Adopt hidden scissor ultra-thin structure, there is no need for construction pit, and it takes up small space.

-With independent control cabinet and low-voltage control, the safety performance of the machine is excellent

-With hydraulic capacity synchronous oil cylinder, the operation of platform is synchronous and stable

-With double safety devices of hydraulic lock and mechanical double-tooth safety claw, it is safe and reliable.

-The machine adopts good quality hydraulic and electric components from Italy, Germany and Japan, etc.

The machine is configured according to the following assembly conditions:

- Foundation of machine (position for equipment installation and space)
- Frame of lifter (main structure of lifter and safety mechanism)
- Control cabinet (control part of the machine)

Basic structure

The foundation of machine is composed by concrete structure.

Frame of lifter

It is composed by solid steel connecting leveler, main lifting platform, pneumatic double-tooth safety components and hydraulic oil cylinder components.

Control cabinet

At the bottom of the control panel, there is a hydraulic control system such as hydraulic oil tank, hydraulic pump, hydraulic motor and hydraulic valve, etc. While the upper part is electrical control system



Scissor Lifter is designed to lift vehicles. It is not suitable for other occasions, especially for operation of washing and spraying. In addition, it shall not lift things heavier than the rated load.

Chapter II : Specification Parameters

Major technical parameters:

Model	Maximum Lifting Capacity	Maximum Lifting Height	Initial Platform Height	Platform Length	Platform Width	Lifting Time	Whole Machine Weight	Whole Machine Length	Whole Machine Width
8230CJ	3000Kg	1850mm	110mm	1450mm	635mm	≤ 50S	850Kg	1820mm	2020mm

Electrical Parameters: Electrical Machine: 2.2Kw 2800r/Min

Supply Voltage: Standard Configuration: 380V 50Hz, different requirements of voltage grade can be customized based on needs of clients.

Machinery Noise: ≤ 70db **Air Supply Pressure:** 6-8kg/cm²

Hydraulic Pump Station: **Rated Flow:** 2.1cc/r, Maximum Working Pressure: 30Mpa

Hydraulic oil: 14L; winter 20# antiwear hydraulic oil; summer 46# antiwear hydraulic oil;

(hydraulic oil is provided by clients)

Operating Environment:

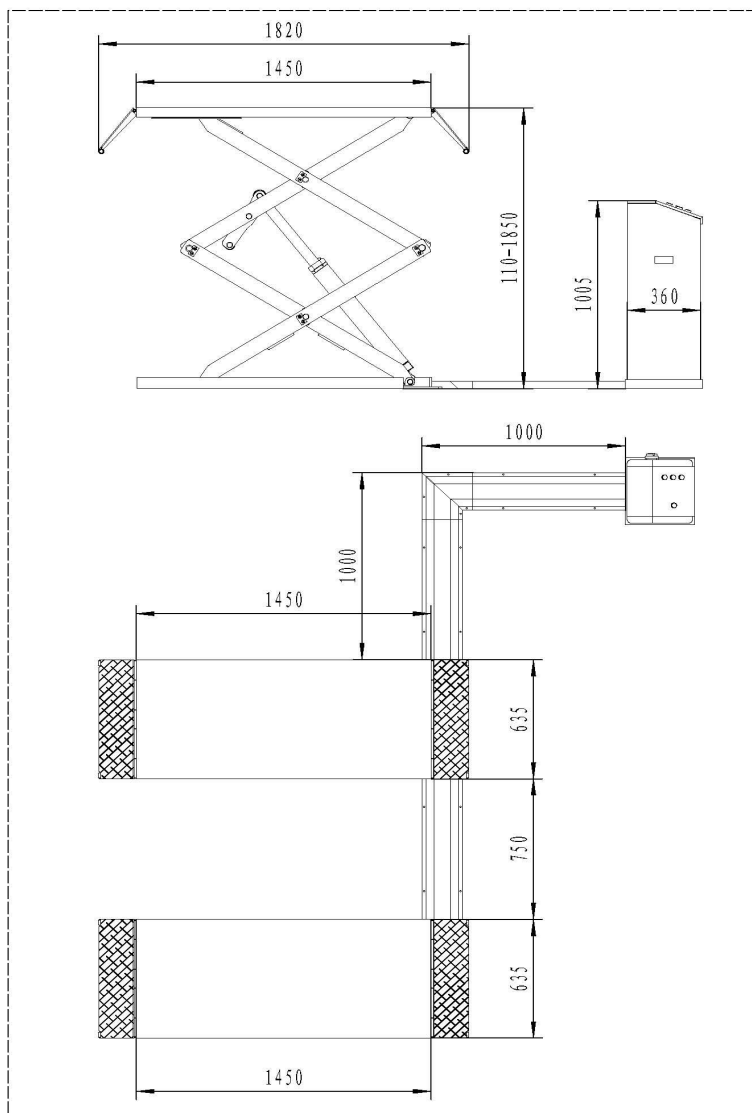
Working Environment Temperature: 5-40°C

Working Environment Humidity: 30-90%

Transportation/Storage Temperature: -25 °C-55 °C

Machine Installation Height: $\leq 2000\text{M}$

Lifting Machine Outline Dimension Drawing:



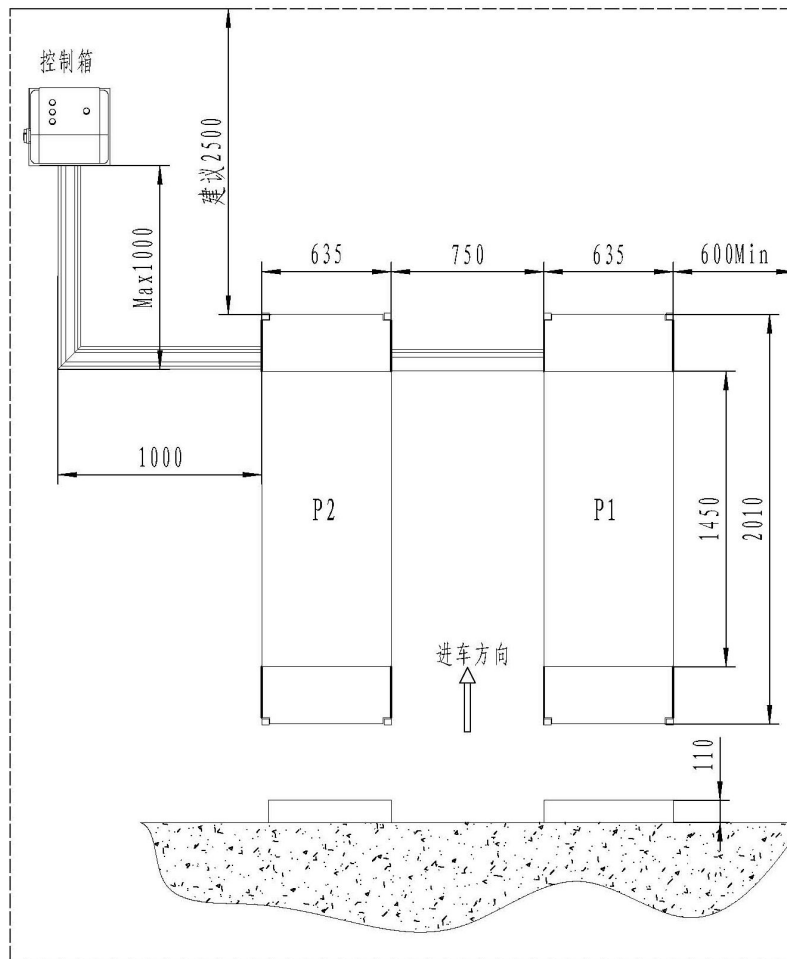
Attention: Basic requirements

- Concrete type is 425#, the dry period is 15 days
- Remove the internally generated surface in the foundation pit, the thickness of concrete at the pit bottom is $\geq 200\text{mm}$, The levelness is $\leq 5\text{mm}$

Provide the following at the same time:

- Connect to the power of the control panel (400V or 230V 15 A)
- Connect to the compressed air inlet tube on the control panel ($\Phi 8 \times 6\text{mm}$)

Scissor Lifting Machine Installation Plan



Equipment Foundation Drawing (Control console can be placed on either left side or right side)

Note: The bottom foundation of P1, P2 lifting platforms shall be concrete structure. Where the thickness of indoor floor is no more than 20mm, concrete with area of 2500×2500mm and thickness of ≥ 200 mm should be poured under the position of P1, P2.



Thickness and levelness of foundation concrete is extremely crucial. One shall not expect too much of level adjusting capability of the machine.

Chapter III Safety



There is important content in this chapter. Operators shall carefully read this chapter.

The following content is explanation and description about danger and the possible danger during the operation, the correct effect and description of safety devices of equipment, other dangers, correct operating rules and potential dangers, etc.



The designing and manufacturing of lifter is intended for hoisting and maintenance of vehicles. It is inappropriate for the hoisting of other goods. It is suitable especially for the following operation:

- Washing and cleaning of vehicles
- The hoisting operation where there are persons on the platform
- The hoisting operation of goods in bulk or broken goods
- It is applied as the elevator
- It is applied in vehicles with severely tilt frame or severe deformed tire



The manufacturer bears no liability for personal injury or loss of property caused by incorrect operation or operation that violates the operating rules.

During the falling, operator shall operation within the safety area shown in the diagram.

As is shown in the diagram, operations by operator or other irrelevant personnel within this dangerous area are strictly forbidden.

Only when the vehicle is completely hoisted to the required position and the operation platform becomes still and the safety devices of the machine is completely prepared (such as the insurance gear is fully locked), can the operator and maintenance personnel be permitted to conduct operation under the vehicle.



Lifter shall never be used when there are no safety protection devices

The might be casualty of personnel, damage of machine and damage of the vehicle that is to be hoisted if the operating rules mentioned above are not observed.

Overall Prevention



Operator and maintenance personnel shall operate the machine according to the ordinance on safety formulated by the country where the lifter is located.

In addition, operator and maintenance personnel shall:

- Conduct operation in the safety area required in the manual.
- Make no alteration of the safety devices casually.
- Read carefully the safety warnings on the machine and the safety information in the manual.

Safety protection device

When the vehicle is on the hoisting platform, operator and maintenance personnel shall check the possible danger, the manufacturer also shall adopt various protection devices to avoid and reduce the occurrence of dangers as possible.

The safety of personnel and vehicle shall operate according to the following rules:

- When the vehicle-hoisting, operator and maintenance personnel shall never enter the non-safe working area (in the lower part of the machine and the vehicle)

- Make sure that the vehicle is at the correct position on the platform

- Make sure only vehicles with weight, height and length being within the permitted scope of weight, maximum height and length can be hoisted.

During the vehicle-hoisting, personnel shall never stay on the platform

The potential dangers during vehicle-hoisting:

The following safety devices are intended for protecting overloading or mechanical failure protection:

Under the situation of overloading, the overflow valve at the pump station will open and return oil into the oil tank.

Safety rack and gear and rack set of host guarantees personnel under the machine when other protection measures fail. It is necessary to make sure the safety gear and rack set is of perfect occlusion and the integrality of safety gear and rack set is good.



There shall not be any foreign body on the assurance component so that the safety teeth can engage normally.



Danger of extrusion

Danger caused by personnel's failure in leaving the area mentioned above according to the rules when the lifter is hoisting or falling.

No personnel can work under the moving parts of the machine when the lifting platform is hoisting or falling. Personnel shall stay in safety position.



Danger of impact

Operator can conduct hoisting and falling of the lifter when he/she has confirmed that there are no personnel within the dangerous area. Meanwhile, when the lifter is at a rather low height (less than 1.75 meter from the ground), since there is no color on the machine, impact of collision of personnel due to no color on the machine, shall be

avoided.



Danger of personnel falling down

There shall be no personnel on the lifting platform or inside the vehicle that is to be hoisted when the lifter is hoisting or falling, so as to prevent them from falling.



Danger of vehicle-falling:

Danger caused when vehicle is placed at the incorrect position, the over-weight of vehicle and the dimension of vehicle is not in accordance with standards.



Never start the engine of vehicle to conduct hoisting or falling and testing on the lifting platform.

Never lay articles at the falling area and moving parts of the lifter.



Danger of sliding:

Danger of personnel slipping due to oil pollutant on the ground in the surrounding of the lifter, the lower part of the lifter or the surrounding area and platform shall be clean. If there is oil pollutant, please remove it immediately.



Danger of electric-shock:

Danger of electric shock caused by damage of insulation of electrical equipment

Never use water and steam, etc. to clean the machine, never use solvent or paint, etc. to approach the control panel of the lifter



Danger caused by insufficient lighting:

Operator and maintenance personnel shall install lighting required for working area of lifter operation in the corresponding position to prevent loss of parts and personal danger due to insufficient light.

Operator shall constantly observe the lifter and conduct operation within the position of operator due to hoisting and falling.

A rubber gasket should be arranged on the lower part of the chassis while lifting the vehicles



Never move the safety devices, Hoist weight shall not exceed the maximum hoist capability required for the machine and make sure that the machine is not over-loaded

Chapter IV Installation



Only the specialized personnel can conduct installation. They shall carefully read and follow the following instructions to avoid damage of machine and personnel casualty.

Only the authorized technicians can install the lifter.

Installation requirements:

The lifter shall be installed according to the specified distance between walls, columns and other facilities.

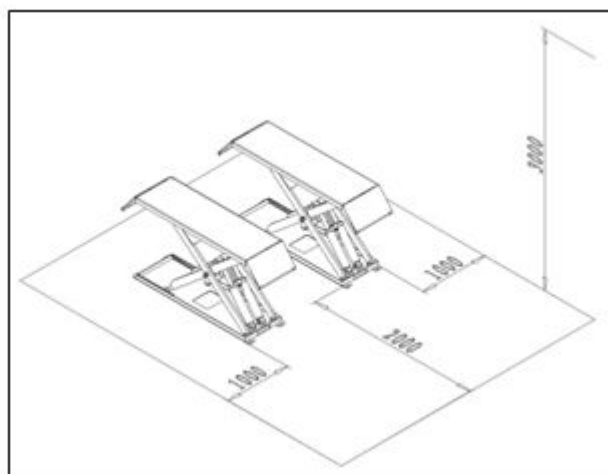
The minimum distance to wall surface is 1000 mm. To prevent against emergency and provide convenience to work, the sufficient space of safety channel shall also be taken into consideration.

The site for installation shall be equipped with power supply and air supply, which are connected to the control panel.

Indoor height shall be no less than 4000mm.

However, the machine can be installed in any indoor ground, as long as the ground is level and coincident to the requirements and the ground has sufficient weight tolerance ($\geq 250\text{kg/cm}^2$, and the thickness of the horizon cement concrete is $\geq 200\text{mm}$)

When the machine is to be installed, there shall be enough light to guarantee the safe operation of commissioning and maintenance and avoid the eyestrain of personnel caused by stimulated light.



It is necessary to check the completeness of the goods before the lifter is installed.

Moving and installation of lifter shall be conducted by the following processes.

See the 3rd page “Transportation and Storage” for the transportation and storage of the machine

Lifting platform installation

- Put the lifting platform onto the place needing installation.
- The oil cylinder bottom is located behind the machine (commissioning direction).
- Fork lift truck or other hoisting equipment hoists the lifting platform; to ensure that the safety device of the machine is on and locked.



To avoid failure of safety device of the machine, one wooden block can be inserted between the connecting rod.

Never work under the lifter when hydraulic system is not fully filled with hydraulic oil and there is hoisting and falling.

- Move the lifting platform, adjust the distance between the two platforms and make sure the two platforms are in parallel position.

Pipe connection:

The circuit, oil-way and gas-way shall be connected according to *Electrical Connection Diagram and Oil-way Connection Diagram*.



The connecting of air-way can be conducted only after the connecting of the hydraulic system has been completed, Oil pipe、wires and air pipe shall never be damaged, During the procedure the oil pipe and air pipe is traversing into the pit through the PVC pipe from the control panel, protection of connectors shall be given special attention to prevent rarities from entering the oil-way and air-way and damaging the hydraulic system.

Electric circuit connection:

Electric circuit shall be connected in accordance with wire diameters and wire number specified in *Electrical Connection Diagram*.



Electric mounting operation shall be only carried by professionals with electric operation qualification.

- Open upper cover of control cabinet

- Power cord connection: connect 380V three-phase four-wire system power cord ($3 \times 2.5 \text{ mm}^2 + 2 \times 1.5 \text{ mm}^2$ cable) to control panel L1, L2, L3, N and incoming terminals; Connect PE ground wire to stud with grounding sign (Figure 25) and stud with grounding sign provided at the bottom of two platforms.
- If it is 230V three-phase power supply, control transformer and wire connection of motor is required to adjust.

Connecting of hydraulic circuit

Connect hydraulic oil pipes according to *Oil-way Connection Diagram*.



Only authorized specialized technicians can engage in the installation of hydraulic circuit, Pay special attention to oil pipe connector.

- Lead out the high-pressure oil pipe from the “operation stop valve G” and the “oil supplementation stop valve F” in the control platform according to the number of the oil pipe, and then connect the high-pressure oil pipe to the oil cylinder through a PVC pipe (see the “oil circuit connection diagram” for the details”)
- When traversing oil pipe, the connector of air pipe shall be wrapped for protection to prevent rarities from entering the compressed air circuit.



When oil pipes are connected, be careful not to commit mistakes in numbering of oil pipes. In standard installation, the control panel is at the left of the direction when vehicle enters, if it is placed on the right, correspond oil pipes shall be adjusted.

Connecting of compressed air-way:

The connecting of air-way shall be in accordance with *Air-way Connection Diagram*.



Only the authorized technicians with specialized qualifications can engage in the installation.

- Connect the $\Phi 8 \times 6$ air inlet pipe to the air inlet port of double oil-water separator at the control panel
- Introduce the $\Phi 6 \times 5$ compressed air pipe from the air outlet of pneumatic solenoid valve of host and connect it to the air valve of claw-lifting



-Take notice of protection of air pipe joints, preventing foreign matter from entering the compressed air circuit.

- Oil-water separator shall be installed prior to connecting the compressed air pipe with the control console, so that extend pneumatic components service life and action reliability.



The air pipes shall not be broken, knotted to prevent gas circuit from impeding or blocking.

Oil-water separator shall be installed before connecting the compressed air intake pipe with the pneumatic solenoid valve air intake in the control console, preventing the pneumatic unit from action failure.

Chapter V Commissioning

Add oil and check phase sequence:

After hydraulic circuit, electrical circuit and air-way are connected according to the annex, operate according to the following procedures:

- Open the control cabinet and fill 18L of 20# wear-resistance hydraulic oil into oil tank with funnel (the user shall provide hydraulic oil)

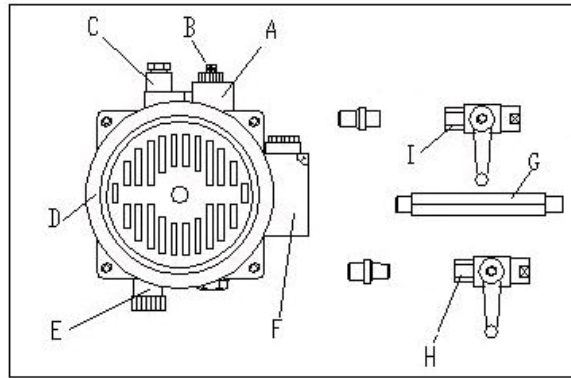


When fill hydraulic oil, guarantee its cleanliness in order to avoid unsmooth oil-way caused by sundries and solenoid valve failure

- Power on, press the “RISING” button and check whether the motor keeps a right rotation direction (the direction shall be clockwise from up to down). If the direction is opposite, cut off the power supply and adjust power supply phase sequence
- Connecting air supply.



After the power supply is connected, high-voltage electric shock inside the control panel is likely to occur. Operation shall be only carried out by professionals with electric operation qualification and it is necessary to prevent electric shock.



Oil Refill and Exhaust Adjustment Procedure:

1. Pull the handles of “oil refill stop valves H” and “I” until they are vertical to the oil pipe.
 2. Press the “up” button SB1 to lift up the lifting platform to the highest position.
 3. Pull the handles of “oil refill stop valves H” and “I” until they are paralleled to the oil pipe.
 4. Loosen the bleed screw above the master cylinder (the thicker one) to exhaust the air in the master cylinder and then screw up the screw.
 5. Switch off the “oil refill stop valves H” and “I” (pull the handles until they are vertical to the oil pipe).
 6. Press the “down” button SB3 to lower the lifting platform to the lowest position.
 7. Then lift up the lifting platform to the highest position. Repeat 3-6 adjustment steps until there is no air to be exhausted from the bleed screw.
 8. Descend the lifting platform, and oil refill and exhaust adjustment is completed.
- If the platform is not leveled, it shall be adjusted slightly as follows:

Platform Horizontal Adjustment Procedure:

- A. Lift up the platform by about 500mm
- B. Pull the “oil refill stop valves H” and “I” until they are paralleled to the oil pipe.
- C. Press the “up” button and pull the handles of “H” or “I” until it is vertical to the oil pipe when two levels are completely consistent.

Inspection: whether the safety device of the two safety claws operates agilely and reliably and whether there exits leakage of oil-way and gas-way

Installation of foundation bolt:



The construction of foundation bolt shall be undertaken after the expiration of maintenance for concrete. Otherwise the strong quality shall be affected.

- Adjust the left and right platform in alignment and the distance of the two platforms according to the requirements.
- Impact drill hammer of $\Phi 18$ shall be drilled to the deep hole of 120mm from ground through base hole of platform with electric hammer pinch and entrance to hole shall be cleaned.
- Foundation bolt shall be installed in the holes with light hammer (without installing the central expansion nail of foundation, it shall be installed after leveling adjustment is completed).

Horizontal Adjustment:

- Use gradienter or horizontal pipe to detect levelness of the platform
- If it is caused by unevenness of foundation, iron blocks can be used to pad the lower position
- After the horizontal adjustment is completed, insert ground screw central expansion nail, heavily hammer down the expansion nail and screw up the ground bolt and nut.



When the guarantee period of concrete is not expired and central expansion nail of foundation bolt shall not be installed.

After leveling, the space between base plate and ground shall be filled with cement mortar.

No-load Test:

- Press the “up” button SB1, and observe whether two platforms ascend steadily and synchronously.
- Observe whether safety claw is able to accurately fall down to the correct position, if there is air leakage and oil spilling in the gas circuit and the oil circuit respectively.



During test, there shall not be persons and other articles in the lifter rising and falling or regulated area. For any abnormal conditions, shut power supply general switch and commission once again after the failure is removed

Load test:

-Drive a car that weighs not more than the maximum lifting weight onto the platform and brake. The personnel in the car leave the car.

-Press the “RISING” button SB1, lift host platform and observe whether hosts’ platforms rise steadily and simultaneously.

-Lift the platforms to the highest position and observe whether the maximum limit is accurate and reliable.



During test, there shall not be persons and other articles in the lifter rising and falling or regulated area.

The weight of tested vehicle can not exceed the minimum lifting capacity of the lifter

Inspect whether there exists oil or gas leakage in oil-way and gas-way. For any abnormal conditions, shut down the machine timely and commission once again after the failure is removed.

Chapter V Operation



Only operator that has been trained is allowed to operate the lifter. Inspect according to the following cautions.

Operational cautions

- The obstacle around and below the machine shall be removed before work.
- During rising and falling, there shall not exist persons in the regulated area for the lifter, below the machine and in the vehicle on the platform.
- The lifter can not lift vehicles and other goods that weighs beyond the lifter operation scope.
- In lifting process, the position under the chassis of the vehicle should be provided with a rubber mat, and the active plate of the long wheelbase vehicle should be extracted.
- During rising and lifting, observe whether the platforms are simultaneous all the time. If abnormal conditions are found, stop the machine at once. The machine can be used again after inspection and the failure is removed.
- During falling operation, observe whether the two safety claws are separated from the safety rack completely. Stop falling operation if they are not.
- When the machine will not operate for a long time or during night, the platform

shall be lowered to the lowest position on the ground, the vehicle shall be driven away and the power supply shall be cut.

Electric operational instruction: (refer to operation panel diagram)



Ascending:

- Press the “up” button SB1, and the oil pump activates, hydraulic oil is delivered to hydraulic cylinder through “main joint G” and “high-pressure oil pipe”, the platform is ascending.
- Release SB1, the oil pump stops operation, and the platform stops ascending immediately.

Locking:

Press “SB2”, return oil solenoid valve gets electrified, and the safety device goes back off onto the safety gear rack; and the lifting machine is locked at this moment.

Descending:

-Press the “down” button SB3, and oil pump activates, hydraulic oil is delivered to hydraulic cylinder through “working stop valve” and the platform is ascending. Under the control of time relay, the oil pump stops working after the platform has ascended for 2-3 seconds. At this moment, both pneumatic solenoid valve and return oil solenoid valve get electrified, safety device opens and the platform descends.

Filling and leveling operation (normal usage period)



After the machine is used, since the air in the oil cylinder is not released completely or the hydraulic oil is lost naturally or leaks leading to

unevenness of the two platforms, filling adjustment shall be conducted.

There shall not be any load on the platform during filling and leveling

Adjustment Procedure:

- A. Lift up the platform by about 500mm
- B. Switch on the oil refill valve of the platform whichever is at lower position (pull the oil refill stop valve until it is paralleled to the oil pipe). Press the ascending button until two platforms are at equal altitude and then switch off stop valve (pull the stop valve until it is vertical to the oil pipe), the oil refill adjustment procedure is completed.

Chapter VI Care and Maintenance



Lifting machine maintenance shall be performed by trained operating personnel

I . Daily: A: Often wipe and clear the machine to keep it clean.

B: Keep working environment clean and clear away obstacles and oil stain on the floor.

C: Check the integrity of various safety devices, ensuring the action is flexible and reliable.

D: Check the machine for air and oil leakage.

II . Weekly: All twisted axis areas of the machine shall be lubricated with engine oil by using engine oil pot once a week.

III. Monthly: A: The safety gear-rack and moving parts of top-and-bottom slideway shall be lubricated with lubricating grease once a month.

B: Check the ground bolt for any looseness and screw it up if any.

C: Check all pipelines for wear condition and leakage condition.

IV. Yearly: A: Change hydraulic oil one a year and ensure upper limit of oil level all the time.

B: Fully check all components for possible wear, interference and damage

thoroughly.

C: Check slide blocks for wear condition, lubricating grease shall be applied in time if the wear of blocks occurs.

D: Check oilless bearings of various nodes for intactness.



While changing hydraulic oil, the machine shall be descended to the lowest position, and the old oil in the oil tank shall be fully discharged and filter shall be used when filling new oil.

The Storage after usage

When the machine is shut down or not being used for a long time:

A: Cut off the power and air supply.

B: Lubricate contact parts of all components

C: Fully discharge hydraulic oil in the oil cylinder, oil pipe and oil tank.

D: The machine shall be shielded with dust cover.

Chapter VII Faults and Troubleshooting



Machine faults solving shall be undertaken by operators having been trained with professional experience.

Fault phenomenon and troubleshooting:

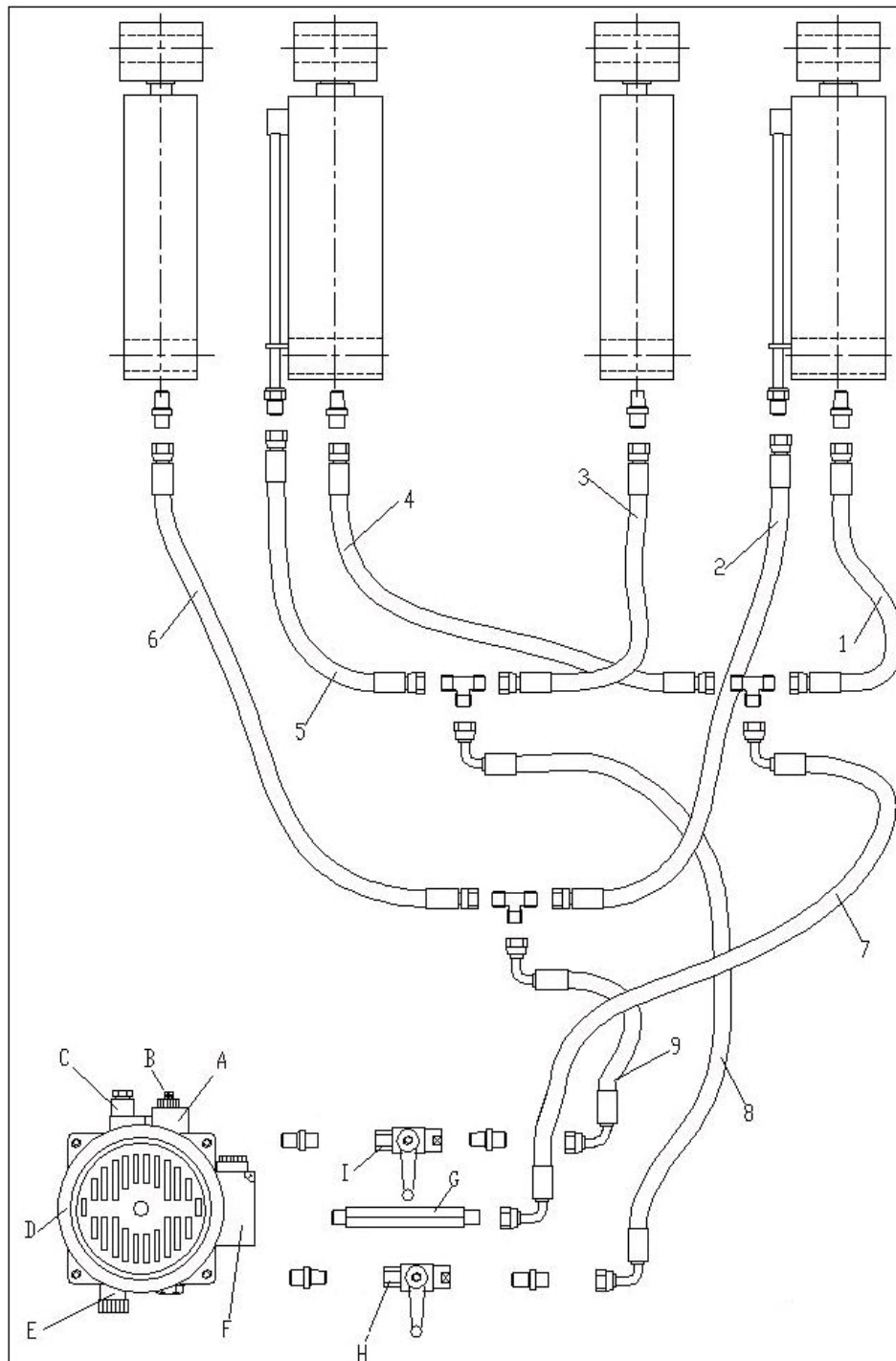
Fault phenome non	Phenomenon and reasons	Troubleshooting
Motor fails to rotate upon pressing rising	① Abnormal power supply or zero line	After inspecting and eliminating, wires are connected
	② AC connector of main circuit for motor of pump is not connected	If motor shall operate after pressing motor by insulating rod, inspect control circuit. If the voltage of coil end for contactor is normal, contactor is replaced.
	③ Fault in limit switch occurs	If the faults are eliminated after the terminals connecting limit switch of 102# and 100# is short connected via wire, such limit switch and shall be inspected. Meanwhile, limit switch shall be adjusted or replaced.
	④ Button switch is damaged	Inspect contact point of button and wire for eliminating.
Motor can rotate but fail to rise upon pressing rising	① Motor rotates in reverse	Change incoming sequence of power supply
	② Motor shall rise with light load and it fails to rise with heavy load	Heighten the safety pressure setting of overflow valve by slightly screwing right. If there is dirt in the falling solenoid valve plug, clean the plug.
	② Hydraulic oil is not sufficient	Fill hydraulic oil.
	④ The releasing screw of solenoid valve for falling is not be screwed down	Screw down the releasing screw of solenoid valve for falling
Lifter fails to fall after	① Safety claw is not separated from safety rack	The platform shall be lifted a little , then lower the platform.

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pressing down button	② Safety claw is not hoisted	Air pressure is insufficient, safety claw is blocked, or air pipe is broken. Regulate the pressure of air compressor and inspect air pipe for eliminating
	③ Solenoid air valve does not operate	Where since solenoid valve is power on but fails to operate, air circuit is not connected. Inspect or replace solenoid valve
	④ Solenoid valve in falling does not operate	Inspect the plug of solenoid valve in falling and coil and inspect whether the copper nut on the end is screwed or not
	⑤ Explosion-proof valve is blocked	Remove the “explosion-proof valve” in oil inlet hole at the bottom of oil cylinder of host or sub-machine and clean it
Lifter falls slowly under normal load	① Viscosity of hydraulic oil is too strong or frozen, goes bad(winter)	Replace with hydraulic oil or improve the temperature indoor according to the requirement of user's manual
	② “Explosion-proof valve” preventing oil pipe from crack is blocked off	Remove or close air inlet pipe to make the safety claw of lifter is locked without hoisting. Remove the “explosion-proof valve” in oil inlet hole at the bottom of oil cylinder of host or sub-machine and clean it
Left and right platform are out of sync and unequal in height	① Air in oil cylinder is not exhausted	Refer to the filling and leveling operation
	② There is oil leak in oil pipe or connector	Screw on the connector or replace oil seal. Then filling and leveling are conducted
	③ “Filling-ending valve G or H” is not closed tightly and filling is needed nearly every day	Replace filling-ending valve and filling and leveling are conducted
Sound is generated when lifting and falling	① Lack of lubricating	Oil machine is applied to all hinged place and moving part(including piston) for lubricating
	② Base or machine is distorted	Adjust and level machine again and fill (pad) the base

Annex 1

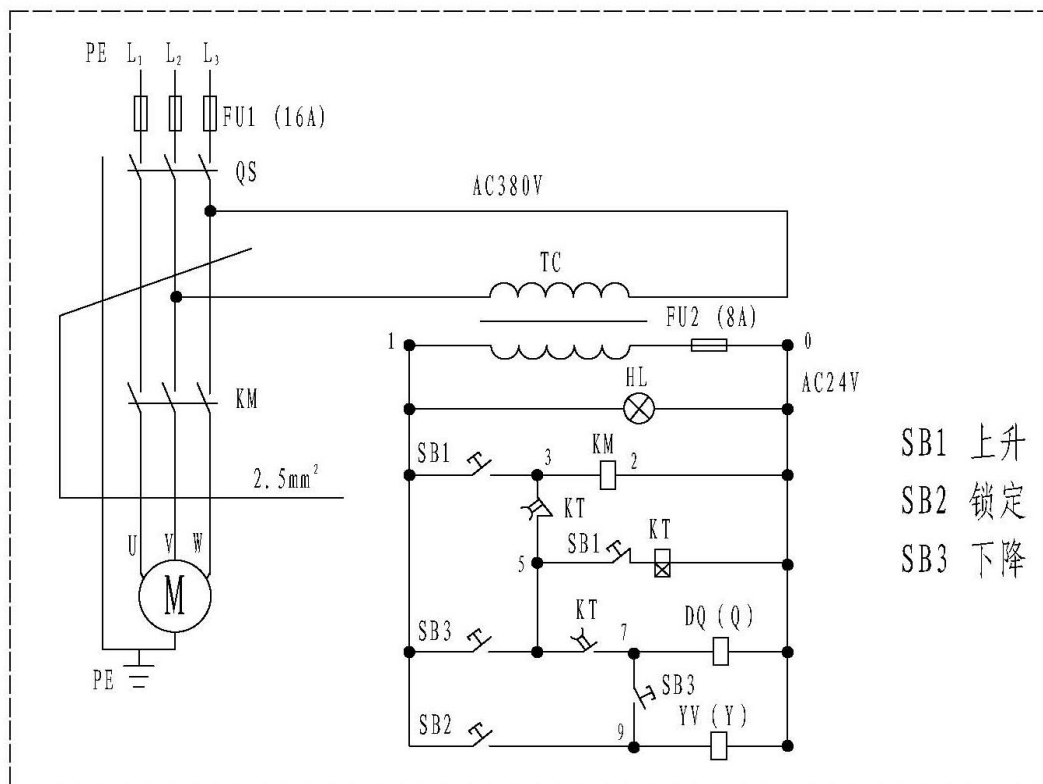
Oil circuit Connection Diagram



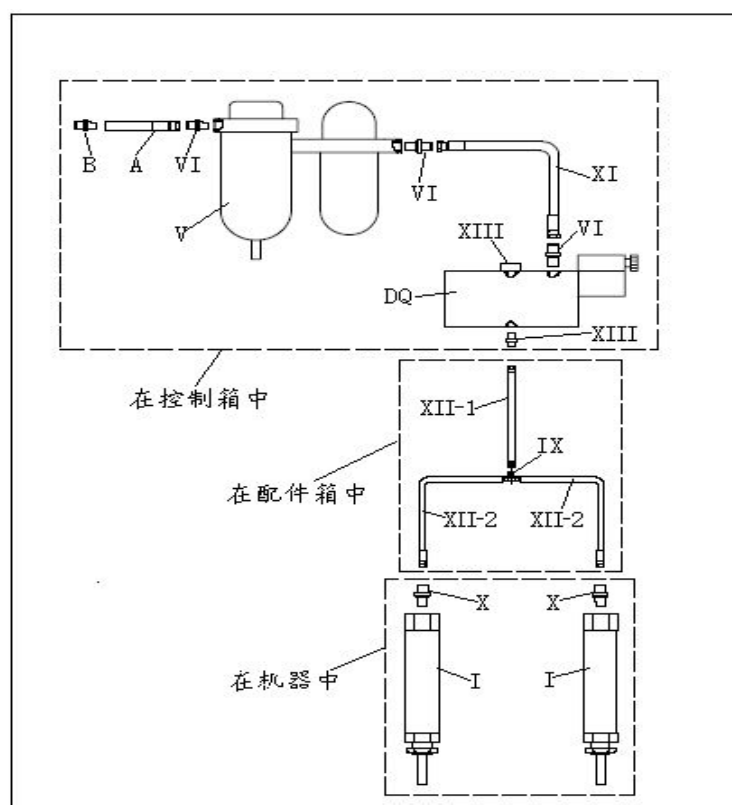
- A. Descending solenoid valve, B. Manually descending knob, C. Solenoid valve coil, D. Pump motor, E. Overflow valve, F. Motor junction box, G. Main joint, I. oil refill stop valve, H. oil refill stop valve, 1~9. high-pressure oil pipes**

Annex 2

Electrical Equipment Schematic Diagram



Gas circuit Connection Diagram



Warranty Certificate

Product Warranty Card

Dear Customers:

From the date of purchase of this product, you will enjoy our all-round services, and we also expect to receive your precious opinions on our quality of products and services.

After-sales service commitments:

1. Warranty period for our product shall last for 1 year from the date of installation for use under normal application.
2. After-sales services within warranty period are absolutely free (except for consumptive parts).
3. Provide lifelong services beyond warranty period (it is charged at cost price).
4. Following circumstances are not within the warranty scope:
 - A: Unable to provide the warranty card or the warranty card is provided without manufacturer's or dealer's seal.
 - B: Abnormal use of the product, without following the operating procedure.
 - C: Discretionally change the structure of the machine.
 - D: The product's spraying surface being scratched.
 - E: Service life is beyond warranty period.

Please fill out the warranty card and keep it properly

Warranty Card Copy

Product Model		Product Name	
Ex-factory Date		Ex-factory No.	
Installation Time		Installation Personnel	
Place of Purchase		Telephone No.	
User		Telephone No.	
Dealer		Manufacturer	